National Institute of Environmental Health Sciences

Assessment of a syndromic surveillance system based on morbidity data: Results from the Oscour network during a heat wave

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Abstract:

BACKGROUND: Syndromic surveillance systems have been developed in recent years and are now increasingly used by stakeholders to quickly answer questions and make important decisions. It is therefore essential to evaluate the quality and utility of such systems. This study was designed to assess a syndromic surveillance system based on emergency departments' (ED) morbidity rates related to the health effects of heat waves. This study uses data collected during the 2006 heat wave in France. METHODS: Data recorded from 15 EDs in the Ile-de-France (Paris and surrounding area) from June to August, 2006, were transmitted daily via the Internet to the French Institute for Public Health Surveillance. Items collected included diagnosis (ICD10), outcome, and age. Several aspects of the system have been evaluated (data quality, cost, flexibility, stability, and performance). Periods of heat wave are considered the most suitable time to evaluate the system. RESULTS: Data quality did not vary significantly during the period. Age, gender and outcome were completed in a comprehensive manner. Diagnoses were missing or uninformative for 37.5% of patients. Stability was recorded as being 99.49% for the period overall. The average cost per day over the study period was estimated to be euro287. Diagnoses of hyperthermia, malaise, dehydration, hyponatremia were correlated with increased temperatures. Malaise was most sensitive in younger and elderly adults but also the less specific. However, overall syndrome groups were more sensitive with comparable specificity than individual diagnoses. CONCLUSION: This system satisfactorily detected the health impact of hot days (observed values were higher than expected on more than 90% of days on which a heat alert was issued). Our findings should reassure stakeholders about the reliability of health impact assessments during or following such an event. These evaluations are essential to establish the validity of the results of syndromic surveillance systems.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2918496

Resource Description

Early Warning System: ☑

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure : ☑

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat

Geographic Feature: ☑

resource focuses on specific type of geography

Urban

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : France

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Injury, Mental Health/Stress, Morbidity/Mortality, Other Health Impact

Mental Health Effect/Stress: Mood Disorder

Other Health Impact: heat related illness

Intervention: ☑

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Medical Community Engagement: ☑

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: ☑

format or standard characteristic of resource

Research Article

Resilience: ☑

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content